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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/016,131	12/17/2001	Dharapuram N. Srinath	3135-Z	4160

7590

12/29/2004

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EXAMINER

KIM, CHRISTOPHER S

ART UNIT

PAPER NUMBER

3752

DATE MAILED: 12/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	10/016,131		SRINATH ET AL.	
	<b>Examiner</b>		<b>Art Unit</b>	
	Christopher S. Kim		3752	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 24 June 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 4-13 is/are pending in the application.
- 4a) Of the above claim(s) 5 and 8-10 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,6,7 and 11-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Response to Amendment***

1. The response filed June 24, 2004 is acknowledged.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

### ***Election/Restrictions***

3. This application contains claims 5 and 8-10 drawn to an invention nonelected with traverse in Paper No. 10. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

### ***Drawings***

4. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "first and second two-sided molded chip" recited in claim 13 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure

number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 2 and 4 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The disclosure as originally filed fails to disclose the fluidic oscillator being a non-restrictor pressure reducer upstream of itself.

7. Claims 11-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 11 recites a device comprising a fluidic spray nozzle and a means for reducing the velocity of spray droplets. The recitation "means for..." has been considered as invoking 35 U.S.C. 112, sixth paragraph. The specification discloses, on page 3, three methods to generate low velocity sprays, one of which (the elected species of figures 5 and 6) is to couple a conventional fluidic oscillator with a vortex valve. Similar disclosure is found on page 11. Therefore, it appears that the "means for..." appears to be a double inclusion of the "fluidic spray nozzle", because as evidenced by claim 12, the "fluidic spray nozzle" includes the "vortex chamber". It is uncertain what is encompassed by the means plus function recitation.

In response to this Office action, applicant is required to identify:

1. The function encompassed by the means plus function recitation in claim 11.  
Should it be read as "means for reducing velocity," which would apparently define a vortex valve; or should it be read as "means for reducing velocity of spray droplets issuing from said fluidic spray nozzle so that said spray droplets have energy such that they do not bounce off said surface," which would apparently define a vortex valve and a fluidic oscillator.
2. The structure encompassed by the means plus function recitation in the specification.

Claim 13 recites "said first side" in line 3. It is uncertain whether it is in reference to the first side of the first two-sided molded chip or the second two-sided molded chip.

Claim 13 recites "said second side" in line 4. It is uncertain whether it is in reference to the second side of the first two-sided molded chip or the second two-sided molded chip.

***Claim Rejections - 35 USC § 102***

8. Claims 1, 6, 7, 11 and 12 (as best understood) are rejected under 35 U.S.C. 102(b) as being anticipated by Babich et al. (4,205,786).

Babich discloses a fluidic spray system comprising a fluidic oscillator 2,3 coupled to a supply of liquid A and a vortex valve 1.

9. Claims 1, 2, 4, 6, 7 and 11-13 (as best understood) are rejected under 35 U.S.C. 102(b) as being anticipated by Nekrasov et al. (3,614,961).

Nekrasov discloses a fluidic spray system comprising a fluidic oscillator 2,7 coupled to a supply of liquid A,B and a vortex valve 1.

10. Claim 2 is rejected under 35 U.S.C. 102(e) as being anticipated by Raghu (6,253,782)

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in

the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Raghu discloses a fluidic spray system comprising a fluidic oscillator IC and a flow path reverser SFM.

### ***Response to Arguments***

11. Applicant's arguments filed June 24, 2004 have been fully considered but they are not persuasive.

Applicant argues that Babich does not disclose a fluidic oscillator coupled to a supply of liquid under pressure and a vortex valve immediately upstream of said fluidic oscillator recited in claim 1. Babich discloses a fluidic oscillator 2,3 coupled to a supply of liquid A,B under pressure and a vortex valve 1 (swirl chamber) immediately upstream of said fluidic oscillator 2, 3 ("...of the nozzle 2 a stable swirled flow of the atomizing gas is established which promotes the generation of stable acoustic oscillations." Col 3, lines 20-23. "the acoustically excited flow of the atomizing gas is fed from the nozzle 2 to the second chamber 3, wherein the natural oscillation frequency equals that of the acoustic oscillations of the swirl flow of the atomizing gas." Col 5, lines 24-28). The swirl chamber 1 is immediately upstream of fluidic oscillator 2, 3. The claim 1 does not further limit the vortex valve or the fluidic oscillator. Applicant asserts that Babich's swirl chamber is not a vortex valve and that Babich's acoustic oscillation producing nozzles 2, 3 are not fluidic oscillators, but applicant fails to provide evidence why a swirl

chamber cannot be considered a vortex valve and why the acoustic oscillation producing nozzles cannot be considered a fluidic oscillator.

The above response is applicable to applicant's arguments directed to claims 6 and 7. It is noted that the recitation of intended use in the preamble has been given no patentable weight.

Similarly, Nekrasov's device produces swirl using blades 2 and spiral screens 6 (also see column 1, line 39) to produce acoustic oscillations in fluid exiting nozzle 7.

Applicant argues that Nekrasov is not coupled to a liquid supply. Nekrasov discloses, in column 2, line 60, "To atomize liquid..." Additionally, the dictionary defines the term "fluid" to include liquid and gas. Finally, Nekrasov repeatedly uses the phrase "fluid or gas". See, for example, column 1, line 37; column 2, line 48; column 3, line 64; column 3, lines 70-71. It is reasonable interpretation that Nekrasov's phrase "fluid or gas" is referring to liquid or gas.

### ***Conclusion***

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not




mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher S. Kim whose telephone number is (571) 272-4905. The examiner can normally be reached on Monday - Thursday, 6:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Scherbel can be reached on (571) 272-4919. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Christopher S. Kim  
Primary Examiner  
Art Unit 3752

CK